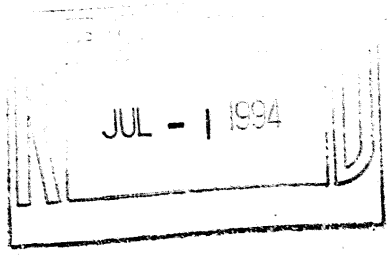
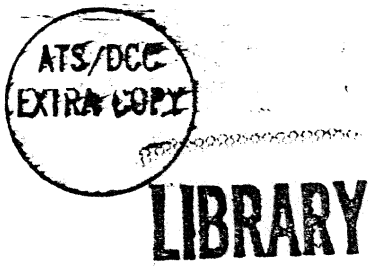
U.S. Department
of Transportation
**Federal Aviation
Administration**





Federal Aviation Administration

Standard

National Airspace System (NAS)

Open System Interconnection (OSI)

Naming and Addressing

(THIS PAGE INTENTIONALLY LEFT BLANK)

DOCUMENT CHANGE NOTICE

1. Originator Name and Address	2.		3. Code Identification	4. Standard No.
SEIC Washington, DC	[ ]	Proposed	N/A	FAA-STD-042A
	[X]	Approved	5. Code Identification N/A	6. DCN No. 1

7. System Designation	8. Related ECR/NCP No.	9. Contract No.	10. Contractual Activity
NAS	see #14	DTFA01-84-C-00017	N/A

11. Configuration Item Nomenclature	12. Effectivity
National Airspace System (NAS) Open System Interconnection (OSI) Naming and Addressing, FAA-STD-042A	N/A

This notice informs recipients that the standard identified by the number (and revision letter) shown in block 4 has been changed. The pages changed by this DCN (being those furnished herewithin) carry the same date as the DCN. The page numbers and dates listed below in the summary of changed pages, combined with nonlisted pages of the original issue of the revision shown in block 4, constitute the current version of this specification.

13. DCN No.	14. Pages changed	S*	A/D*	15. Date
1	NCP 16346 baselines this standard.		A	5/05/94

*S = Indicates Supercedes Earlier Pages *A = Indicates Added Page * D = Indicates Deleted Page

(THIS PAGE INTENTIONALLY LEFT BLANK)

FOREWORD

This standard establishes the requirements for ensuring the uniformity and uniqueness of Open System Interconnection (OSI) names and addresses within the National Airspace System (NAS). The requirements herein are consistent with the International Organization for Standardization (ISO) and the National Institute of Standards and Technology (NIST) OSI registration authorities.

This standard includes definitions in Paragraph 6.1.

(THIS PAGE INTENTIONALLY LEFT BLANK)

TABLE OF CONTENTS

TABLE OF CONTENTS

TABLE OF CONTENTS

Paragraph Title Page

LIST OF FIGURES

(THIS PAGE INTENTIONALLY LEFT BLANK)

1. SCOPE

1.1 Scope. This standard establishes the requirements for the composition of names that identify data communication objects and addresses used to define the location of those objects used in National Airspace System (NAS) open systems (intermediate and end-systems).

Naming and addressing requirements necessary for NAS open system communications with the Aeronautical Telecommunication Network (ATN) are contained in the International Civil Aviation Organization (ICAO) ATN Manual.

1.2 Purpose. The purpose of this standard is to define the requirements for ensuring the uniqueness of OSI names and addresses. The abstract and transfer syntaxes used are not the subject of this document. Adherence to the requirements in this standard is required to achieve interoperability between NAS and ATN open end-systems.

(THIS PAGE INTENTIONALLY LEFT BLANK)

2. APPLICABLE DOCUMENTS

2.1 Government Documents. The following documents form a part of this standard to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this standard, the contents of this standard shall be considered the superseding requirement.

FAA Standards

Order 7350.6	Location Identifiers

Federal Standards

FIPS PUB 146-1	Government Open Systems Interconnection Profile (GOSIP), Version 2.0
FIPS PUB 5-2	Codes for the Identification of the States, District of Columbia, and Outlying Area of the United States and Associated Areas

2.2 Non-Government Documents. The following documents form a part of this standard to the extent specified herein. In the event of conflict between the documents referenced herein and the contents of this standard, the contents of this standard shall be considered the superseding requirement.

International Telephone and Telegraph Consultative Committee (CCITT) Recommendations

CCITT-X.121	International Numbering Plan for Public Data Networks, 1984

International Organization for Standardization (ISO)

ISO 3166:1988	Codes for the Representation of Names of Countries, 3rd Edition
ISO 6523:1984	Data Interchange - Structure for the Identification of Organizations, 1st Edition
ISO 7498-1:1984	Information Processing Systems - Open Systems Interconnection - Part 1: Basic Reference Model, 1st Edition
ISO/IEC 7498-3:1989	Information Processing Systems - Open Systems Interconnection - Basic Reference Model - Part 3: Naming and Addressing, 1st Edition
ISO/IEC 8073:1988	Information Processing Systems - Open Systems Interconnection - Connection Oriented Transport Protocol Specification, 2nd Edition

ISO 8327:1987	Information Processing Systems - Open Systems Interconnection - Basic Connection Oriented Session Protocol Specification, 1st Edition
ISO 8348:1987/ AD2:1988	Information Processing Systems - Data Communications - Network Service Definition - Addendum 2: Network Layer Addressing
ISO 8571-4:1988	Information Processing Systems - Open Systems Interconnection - File Transfer, Access, and Management - Part 4: File Protocol Specification, 1st Edition
ISO 8602:1987	Information Processing Systems - Open Systems Interconnection - Protocol for Providing the Connectionless-mode Transport Service, 1st Edition
ISO 8823:1988	Information Processing Systems - Open Systems Interconnection - Connection Oriented Presentation Protocol Specification, 1st Edition
ISO 8824:1987	Information Processing Systems - Open Systems Interconnection - Specification of Abstract Syntax Notation One (ASN.1), 1st Edition
ISO/IEC 9041-1:1990	Information Processing Systems - Open Systems Interconnection - Virtual Terminal Basic Class Protocol - Part 1: Specification
ISO 9072-2:1989	Information Processing Systems - Text Communication - Remote Operation - Part 2: Protocol Specification
ISO/IEC 9545:1989	Information Processing Systems - Open Systems Interconnection - Application Layer Structure, 1st Edition
ISO/IEC 9594-2:1990	Information Technology - Open Systems Interconnection - The Directory - Part 2: Models, 1st Edition
ISO/IEC 9594-5:1990	Information Technology - Open Systems Interconnection - The Directory - Part 5: Protocol Specifications, 1st Edition
ISO/IEC 9594-6:1990	Information Technology - Open Systems Interconnection - The Directory - Part 6: Selected Attribute Types, 1st Edition
ISO/IEC 9594-7:1990	Information Technology - Open Systems Interconnection - The Directory - Part 7: Selected Object Classes, 1st Edition

ISO/IEC 10021-6:1990	Information Processing - Text Communication - Message Oriented Text Interchange System - Part 6: Protocol Specification
ISO/IEC 10026-3:1992	Information Processing Systems - Open Systems Interconnection - Distributed Transaction Processing - Part 3: Protocol Specification

International Civil Aviation Organization (ICAO)

ICAO ATN Manual: 1993	Manual of the Aeronautical Telecommunication Network, 2nd Edition

(THIS PAGE INTENTIONALLY LEFT BLANK)

3. REQUIREMENTS

3.1 General Requirements. NAS open end-systems shall use unambiguous names and unique addresses. The names and addresses shall be assigned to NAS open system data communication objects in accordance with the requirements stated within this standard. They shall also be registered with the designated FAA registration authority. In addition, the names and addresses shall be stored in the NAS directory information base (NDIB) in accordance with the requirements stated herein and the NAS OSI directory standard to be specified.

3.2 Names. Two types of names may be assigned: a "title" or an "identifier." Titles will be assigned to objects defined for and accessible to users of open end-systems. Identifiers will be assigned to objects defined for use by the end-systems.

3.2.1 Title Naming Rules. Titles shall be assigned to objects in accordance with the directory information tree (DIT) naming rules defined herein and based on Annex B of ISO 9594-7, The Directory - Part 7: Selected Object Classes. The DIT provides a hierarchical structure to unambiguously name and locate objects stored in the NDIB (see Figure 3.2.1-1).

3.2.1.1 Object Classes. The NDIB shall support the object classes defined in the following paragraphs.

3.2.1.1.1 Top. The top object class is a special object class of which every other class is a subclass.

3.2.1.1.2 Alias. The alias object class shall be used to assign an optional name, or pointer to an entry in the DIT.

3.2.1.1.3 Country. The country object class shall be used to represent country entries (i.e., U.S.).

3.2.1.1.4 Locality. The locality object class shall be used to represent locality entries in the DIT. This class shall be used to represent FAA locations including airports, area control facilities, flight service stations, airport towers, the FAA Technical Center, and other FAA locations.

3.2.1.1.5 Organization. The organization object class shall be used to represent organization entries. At a minimum, the organization object class representing the "FAA" shall be supported.

3.2.1.1.6 Organizational Unit. The organizational unit object class shall be used to represent FAA organizational unit entries [e.g., Advanced Automation Program (AAP)].

3.2.1.1.7 Organizational Person. The organizational person object class shall be used for entries representing persons within the FAA organization.

3.2.1.1.8 Organizational Role. The organizational role object class shall be used for entries representing FAA positions or roles within FAA organizational units.

3.2.1.1.9 Group of Names. The group of names object class shall be used to represent distribution list entries.

3.2.1.1.10 Application Process. The application process object class shall be used for entries representing NAS application processes on open end-systems.

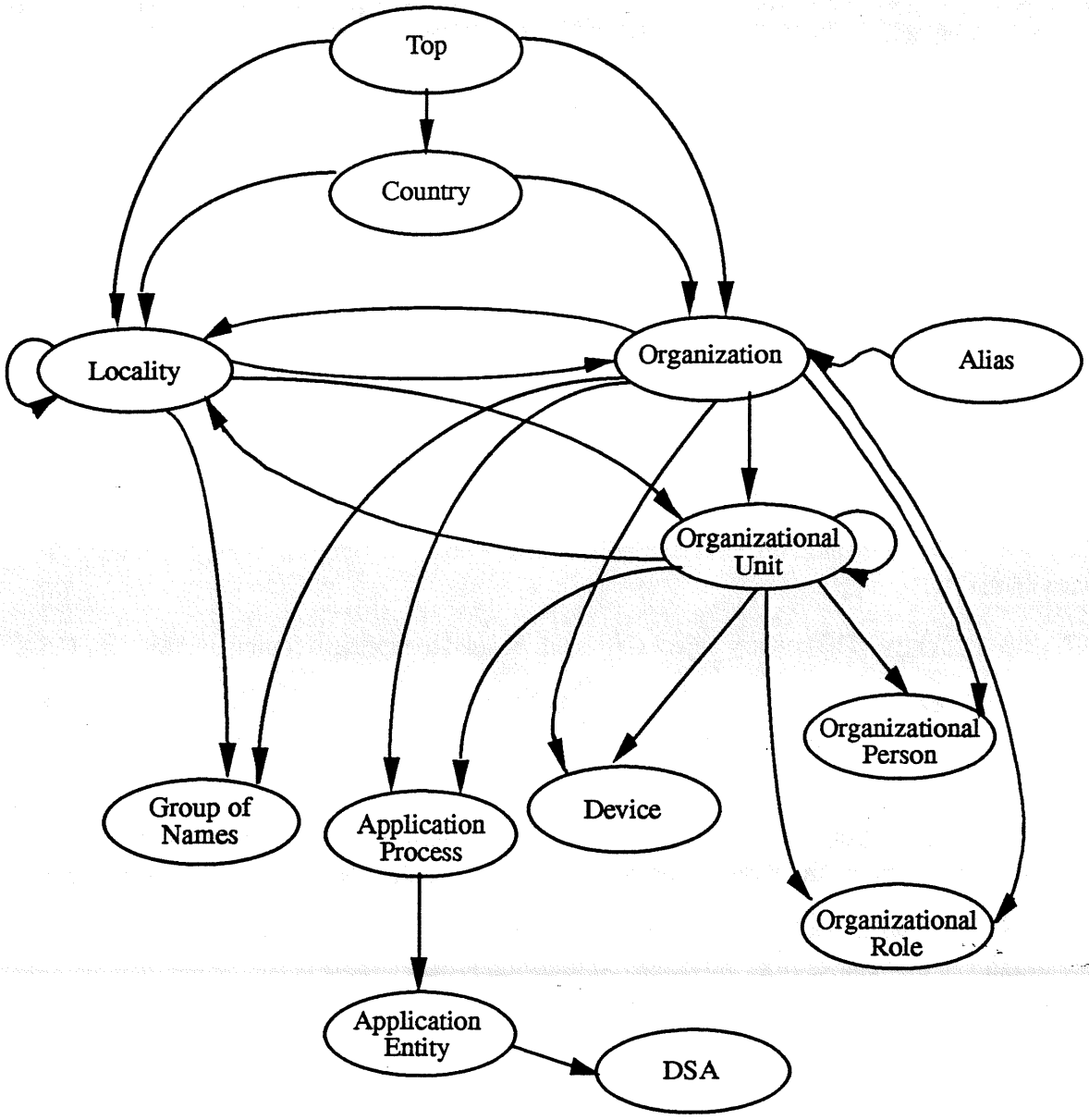


Figure 3.2.1-1 Directory Information Tree

3.2.1.1.11 Application Entity. The application entity object class shall be used for entries representing those aspects of a NAS application process pertinent to OSI communications.

3.2.1.1.12 Directory System Agent. The directory system agent (DSA) object class shall be used to define entries representing DSAs.

3.2.1.1.13 Device. The device object class shall be used to represent FAA physical communication entities within the NAS OSI environment [i.e., Local Communication Network (LCN) and National Airspace Data Interchange Network (NADIN) Packet Switched Network (PSN)].

3.2.1.2 Attribute Types and Syntaxes. The NDIB shall support the attribute types defined in the following paragraphs. These attribute types shall conform to the values and syntaxes defined herein and in ISO 9594-6, The Directory - Part 6: Selected Attribute Types.

3.2.1.2.1 Organizational Attribute Types.

3.2.1.2.1.1 Organization Name. The organization name attribute type value shall have a printable string syntax and a maximum of 64 characters. Character casing distinctions shall be ignored.

3.2.1.2.1.2 Organizational Unit Name. The organization unit name attribute type value shall have a printable string syntax and a maximum of 64 characters. Character casing distinctions shall be ignored.

3.2.1.2.1.3 Title.The title attribute type value shall have a printable string syntax and a maximum of 64 characters. Character casing distinctions shall be ignored.

3.2.1.2.2 Geographical Attribute Types.

3.2.1.2.2.1 Country Name. The country name attribute type shall have a printable string syntax of size two octets which identifies a country code defined in ISO 3166.

3.2.1.2.2.2 Locality Name. The locality name attribute type value shall have a printable string syntax and a maximum of 128 characters. Character casing distinctions shall be ignored.

The values stored in the NDIB shall consist of FAA location identifiers, defined in FAA Order 7350.6, and shall have a length of 4 octets.

3.2.1.2.2.3 State or Province Name. The state or province attribute type value, which identifies a state code defined in FIPS PUB 5-2 or a Province outside the U.S., shall have a printable string syntax and a maximum of 128 characters. Character casing distinctions shall be ignored.

The values for state codes stored in the NDIB shall be a printable string of two characters. The values for the province shall be assigned by specific countries.

3.2.1.2.3 OSI Application Attribute Types.

3.2.1.2.3.1 Presentation Address. The presentation address attribute type value, which specifies the presentation address associated with an object representing an application entity, shall consist of a sequence of the following information:

a. presentation selector (PSEL)

b. session selector (SSEL)

c. transport selector (TSEL)

d. network service access point (NSAP) addresses

The PSEL, SSEL, and TSEL shall have an octet string format and a length of two octets. NSAP addresses shall have an octet string format and a length of 20 octets.

3.2.1.2.3.2 Supported Application Context. The supported application context attribute type value, that specifies the application context(s) which the object entry supports, shall have an object identifier syntax. This attribute value shall contain the object identifier value specified for the protocol identified by the application entity.

3.2.1.2.4 Labeling Attribute Types.

3.2.1.2.4.1 Common Name. The common name attribute type value shall have a printable string syntax and a maximum length of 64 characters. Character casing distinctions shall be ignored.

3.2.1.2.4.2 Surname. The surname attribute type value shall have a printable string syntax and a maximum length of 64 characters. Character casing distinctions shall be ignored.

3.2.1.2.4.3 Serial Number. The serial number attribute type value shall have a printable string syntax with a maximum length of 64 characters.

3.2.1.2.5 Telecommunications Attribute Types.

3.2.1.2.5.1 Telephone Number. The telephone number attribute type value shall have a printable string syntax with a maximum length of 14 characters.

3.2.1.2.5.2 Facsimile Telephone Number. The facsimile telephone number attribute value shall have a printable string syntax with a maximum length of 14 characters.

3.2.1.2.5.3 X.121 Address. The X.121 address attribute type value shall have a numeric string syntax and have a length of 14 decimal digits. The X.121 address may contain an international prefix (P) which shall have a numeric string syntax and have a length of one decimal digit.

3.2.1.3 NAS Titles.

3.2.1.3.1 Application Process Titles. The AP Title shall be composed of a sequence of relative distinguished names. A relative distinguished name is made up of a set of attribute types and attribute values. The AP Title shall be composed of four attribute types: organization, organizational unit, common name 1, and common name 2. The attribute value shall be left-justified and with blanks filled in.

The combination of the attribute values will uniquely identify the application process.

An example of an AP Title for an application process which processes flight plans on the Area Control Computer Complex (ACCC) processor in area control facility (ACF) number 1 is as follows:

AP TITLE = {FAAbbb.AAPbbb.ACCC01.FPbbbb}

where b=blank

3.2.1.3.1.1 Organization. The organization attribute type shall specify the organization with which the object is affiliated. The attribute value shall be a printable string of six characters (e.g., FAAbbb, where b = blank). This value, obtained from the General Services Administration (GSA), shall be used to describe objects in terms of organizations with which they are associated.

3.2.1.3.1.2 Organizational Unit. The organizational unit attribute type shall specify the organizational unit with which the object is affiliated. The attribute value shall be of a printable string of six characters (e.g., AAPbbb).

3.2.1.3.1.3 Common Name 1. Common name 1 attribute type identifies the open end-system within the organizational unit. The attribute value shall be of a printable string syntax of six characters (e.g., ACCC01) which identifies a particular open end-system.

3.2.1.3.1.4 Common Name 2. Common name 2 attribute type identifies a particular process within an open end-system. The attribute value shall be of a printable string syntax of six characters (e.g., FPbbbb) which identifies a particular process.

3.2.1.3.2 Application Entity Qualifier. The application entity (AE) qualifier shall be an implicit relative distinguished name with a common name attribute type. The attribute value shall be assigned as follows:

10 Remote Operations Service Element (ROSE) Protocol (ISO 9072-2)

20 File Transfer, Access and Management (FTAM) Protocol (ISO 8571-4)

30 Message Handling System (MHS) Protocol (ISO 10021-6)

40 Transaction Processing (TP) Protocol (ISO 10026-3)

50 Virtual terminal (VT) Protocol (ISO 9041-1)

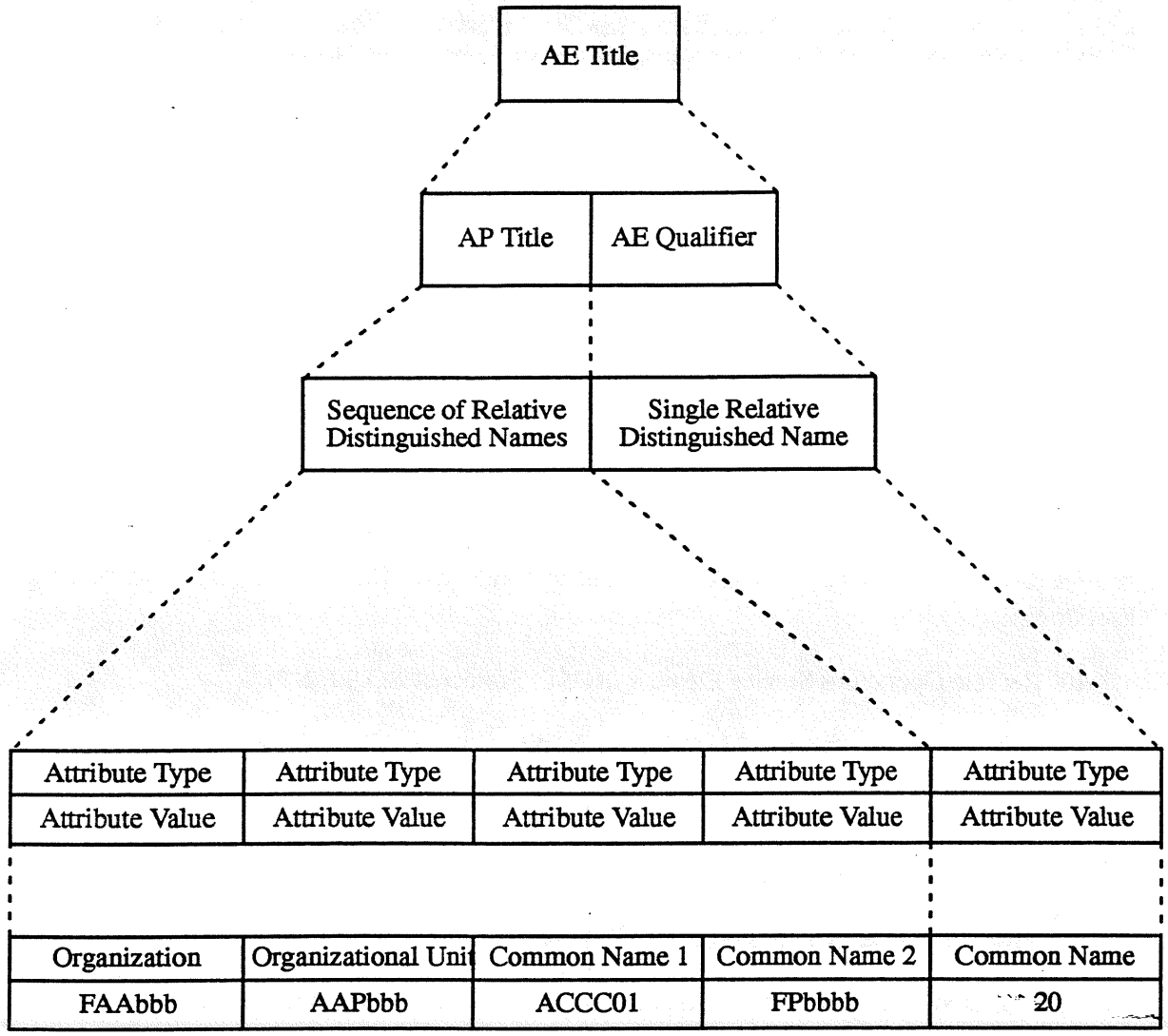
An example of an AE qualifier for an application process using FTAM is as follows:

AE Qualifier = {20}

3.2.1.3.3 Application Entity Titles. An application entity (AE) title shall be assigned to each NAS AE as shown in Figure 3.2.1.3.3-1. It shall be composed of an application process (AP) title and an AE qualifier as defined in ISO 7498-3, Basic Reference Model - Part 3: Naming and Addressing. The amalgamation of the AP title and the AE qualifier shall produce an AE title that uniquely identifies a NAS system application entity.

An example of an AE title for an application process using FTAM is as follows:

AE TITLE = {FAAbbb.AAPbbb.ACCC01.FPbbbb.20}



b = blank

Figure 3.2.1.3.3-1 AE Title Format

3.2.2 Identifiers Naming Rules. Object identifiers shall be assigned to OSI object-types such as application contexts, abstract syntaxes, and transfer syntaxes.

All object identifiers shall be assigned in accordance with Clause 26 of ISO 8824: Specification of Abstract Syntax Notation One (ASN.1), and the following rules:

a. The identifier shall contain a name form and a number form.

b. The identifier shall be assigned to one object.

c. The name form shall be an English description of the identified object.

d. The number form shall be a numeric, sequential value.

The object identifier structure for ISO protocol standards shall be as specified in Appendix B of ISO 8824 and is made up of the following identifiers:

a. The first identifier, "iso", denotes the applicable registration authority. The value "1" shall be used for ISO specified object identifiers.

b. The second identifier, "standard", denotes the type of entity from which the object is derived. The value "0" shall be used to denote "ISO standard".

c. The third identifier, "standard number", specifies the number of ISO standard.

d. The remaining identifiers shall have values as specified in the international standard.

The object identifier structure for CCITT protocol standards shall be as specified in Appendix C of ISO 8824.

The object identifier structure for joint ISO-CCITT protocol standards shall be as specified in Appendix D of ISO 8824.

Object identifiers for international protocol standards are specified in the standard.

To be able to run an application process which contains FTAM and the association control service element (ACSE) as application service elements (ASE), the object identifier for the application context name is defined as follows:

{ iso standard 8571 application-context (1) iso-ftam (1) }

or

{ 1 0 8571 1 1 }

The object identifier for the abstract syntax name is defined as follows:

{ iso standard 8571 abstract-syntax (2) ftam-pci (1) }

or

(1 0 8571 2 1 }

The object identifier for the transfer syntax is defined as follows:

{ joint-iso-ccitt asn1 (1) basic-encoding (1) }

or

{ 2 1 1 }

3.3 Addresses.

3.3.1 Network Service Access Point. A network service access point (NSAP) address shall be assigned to each NAS open end-system. They shall be unique within the FAA and consistent with the Government OSI Profile (GOSIP), Version 2.0, and Aeronautical Telecommunication Network (ATN) NSAP format requirements as shown in Figure 3.3.1-1. All NAS open end-systems shall use NSAP addresses in their network service protocol headers, allowing the systems to be clearly identified.

3.3.1.1 NSAP Assignment. NAS end-systems NSAP addresses shall be assigned by the FAA. ICAO shall assign NSAP addresses for ATN users.

3.3.1.2 NAS NSAP Address Format. The NSAP address structure for the NAS end-systems shall be 20 octets in length and have two basic parts: the initial domain part (IDP) and the domain specific part (DSP). For NAS end-systems communicating to ATN users, the NASP address structure (field, value, size) shall be in accordance with chapter 7 of the ICAO ATN Manual

3.3.1.2.1 Initial Domain Part. The IDP of the NSAP address for the NAS end-systems consists of two parts: the authority and format identifier (AFI) and the initial domain identifier (IDI).

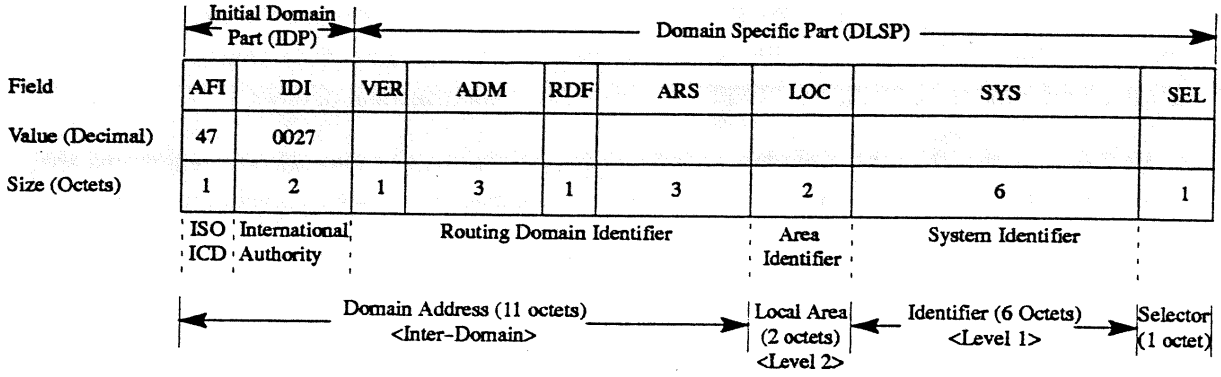
3.3.1.2.1.1 Authority and Format Identifier. The AFI field for the NAS end-systems shall be one octet in length. It shall contain the decimal value "47" according to GOSIP version 2. The AFI value specifies that the IDI part is interpreted as a four decimal digit Intenational Code Designator (ICD) and that the DSP has a binary abstract syntax.

3.3.1.2.1.2 Initial Domain Identifier. The IDI field for the NAS end-systems shall be two octets in length. It shall contain the ICD code "0005" which identifies the civil U.S. Government addressing domain The National Institute of Standards and Technology (NIST) is the administrative authority for civil and military U.S. Government addressing domains. The assignment of addresses to the civil government has been delegated to the GSA.

3.3.1.2.2 Domain Specific Part. The DSP shall consist of seven parts: the DSP format identifier (DFI), administrative authority identifier (AAI), reserved (RS), routing domain (RD), area (Area), end-system identifier (System), and NSAP selector (NSEL) fields. Each field shall be represented in binary.

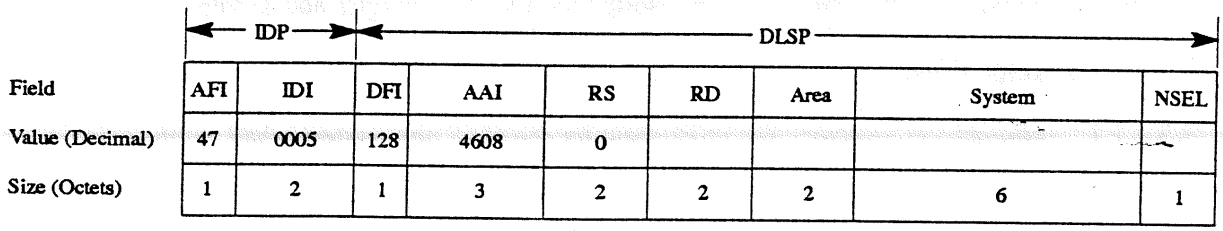
3.3.1.2.2.1 DSP Format Identifier. The DFI field for the NAS end-systems shall be one octet in length. It shall contain the value "10000000" or "128" in decimal, specifying the DSP format defined under ICD "0005".

3.3.1.2.2.2 Administrative Authority Identifier. The AAI field for the NAS end-systems shall be three octets in length. It shall contain the value "001200", expressed as a hexadecimal number, identifying the the Department of Transportation (DOT)/FAA as the administrative subauthority, under GSA, responsible for the allocation and assignment of the remaining portion of the DSP.



AFI:	Authority and Format Identifier (1 octet)
IDI:	Intitial Domain Identifier (2 octets)
VER:	Version Identifier (1 octet)
ADM:	Administration Identifier (3 octets)
RDF:	Routing Domain Format (1 octet)
ARS:	Administrative Region Selector (3 octets)
LOC:	Locatiopn Identifier (2 octets)
SYS:	System Identifier (6 octets)
SEL:	NSAP Selector (1 octet)

a. ATN NASP Address Format



b. GOSIP NSAP Address Format

Figure 3.3.1-1 NSAP Address Formats

3.3.1.2.2.3 Reserved. The RS field for the NAS end-systems shall be two octets in length. It shall contain the value "0000" indicating that the field is reserved for future use.

3.3.1.2.2.4 Routing Domain. The RD field for the NAS end-systems shall be two octets in length and shall indicate the unique routing domain within the NAS administrative domain. It shall contain a value in the range of "0000" to "FFFF", expressed as a hexadecimal number.

3.3.1.2.2.5 Area. The AR field for the NAS end-systems shall be two octets in length and shall indicate the unique routing area within the NAS routing domain. It shall contain a value in the range of "0000" to "FFFF", expressed as a hexadecimal number.

3.3.1.2.2.6 End-system Identifier. The ESID field for the NAS end-systems shall be six octets in length. It shall contain a value in the range of "000000000000" to "FFFFFFFFFFFF", expressed as a hexadecimal number. It is the unique logical value which shall be assigned to each open end-system in the NAS. The ESID field shall consist of three parameters, location identifier (LI), system type (ST), and processor number (PN), as shown in Figure 3.3.1-1b.

3.3.1.2.2.7 NSAP Selector. The NSEL field shall be one octet in length, identifying the network service user. It shall contain a value in the range of "01" to "FF", expressed as a hexadecimal. The following values shall be used:

NSEL Value	Selected Transport or Application Protocol
01	ISO 8073 (Connection-Oriented Transport)
02	ISO 8602 (Connectionless-Mode Transport)

All other values are reserved for future allocation.

3.3.2 Presentation Service Access Point. The presentation service access point (PSAP) address for the NAS end-systems shall be a single tuple of information specifying the required protocol addressing information values required to access the AEs. The tuple shall be in the form: {presentation selector (PSEL), session selector (SSEL), transport selector (TSEL), list of NSAP addresses}. Selector values are unique only within the scope of an open end-system.

3.3.2.1 Selector Values.

3.3.2.1.1 Presentation Selector. The PSEL field for the NAS end-systems shall be one octet in length, identifying the presentation service user (i.e. the AE). It shall contain a value in the range of "01" to "ff", expressed as a hexidecimal number. The following values shall be used:

PSEL Value	Selected Application Protocol
01	ISO 9072-2 (ROSE)
02	ISO 8571-4 (FTAM)
03	ISO 10021-6 (MHS)
04	ISO 10026-3 (TP)
05	ISO 9041-1 (VT)

All other values are reserved for future allocation.

3.3.2.1.2 Session Selector. The SSEL field for the NAS end-systems shall be one octet in length, identifying the session service user. It shall contain a value in the range of "01" to "FF", expressed as a hexadecimal number. The following values shall be used:

SSEL Value	Selected Presentation or Application Protocol
01	ISO 8823 (Connection-Oriented Presentation)

All other values are reserved for future allocation.

3.3.2.1.3 Transport Selector. The TSEL field for the NAS end-systems shall be one octet in length, identifying the transport service user. It shall contain a value in the range of "01" to "FF", expressed as a hexadecimal number. The following values shall be used:

TSEL Value	Selected Session or Application Protocol
01	ISO 8327 (Connection-Oriented Session)

All other values are reserved for future allocation.

3.3.3 Session Service Access Point. The session service access point (SSAP) address for the NAS end-systems shall be a single tuple of information specifying the required protocol addressing information values required to access the session entity. The tuple shall be in the form: {session selector (SSEL), transport selector (TSEL), list of NSAP addresses}.

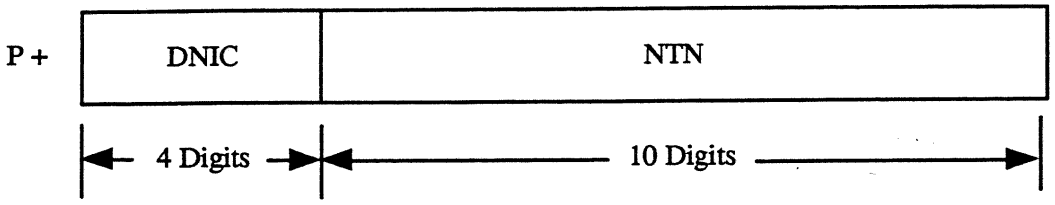
3.3.4 Transport Service Access Point. The transport service access point (TSAP) address for the NAS end-systems shall be a single tuple of information specifying the required protocol addressing information values required to access the transport entity. The tuple shall be in the form: {transport selector (TSEL), list of NSAP addresses}.

3.3.5 Subnetwork Point of Attachment. A subnetwork point of attachment (SNPA) address shall be assigned to each open system (intermediate and end-systems) that have direct connectivity to the NADIN packet switched network (PSN).

It shall be unique within the NADIN PSN. The SNPA address format shall be consistent with the CCITT-X.121, as shown in Figure 3.3.5-1. It shall consist of a single decimal digit international prefix (P) and a 14 decimal digit address. The SNPA address shall have two basic parts, the data network identification code (DNIC) and the network termination number (NTN). The International Prefix shall only be used for a call being made to an open system connected to a public data network in a different country. SNPA addresses shall be mapped to NSAP addresses in accordance with the NAS OSI directory standards to be specified.

3.3.5.1 Data Network Identification Code. The DNIC shall be four decimal digits in length consisting of SNPA digits 1-4. Digit 1 shall be used to indicate world zones such as North America, Europe, etc. Together, digits 1-3 shall specify the data country code (DCC) as defined in CCITT X.121, providing identification of the country, or geographical area. The digit 4 shall be used to specify the network identification number (NID).

Basic SNPA (X.121) Address Format



NAS SNPA (X.121) Address Format

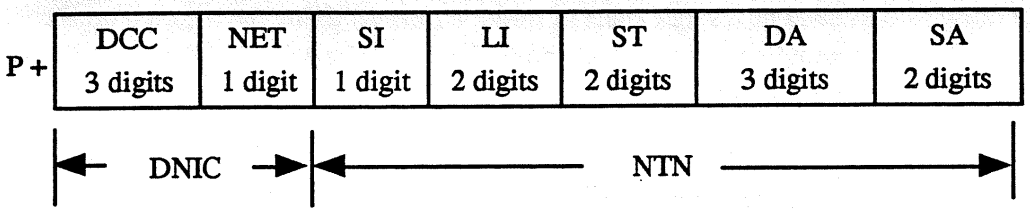


Figure 3.3.5-1 SNPA Address Format

3.3.5.2 Network Termination Number. The NTN shall be 10 decimal digits in length consisting of SNPA digits 5-10. It shall consist of the subnetwork identifier (SI), location identifier (LI), system type (ST), device address (DA), and sub-address (SA).

3.3.5.2.1 Subnetwork Identifier. The SI shall be one decimal digit in length. It shall be used to identify the subnetwork of the open system. See Appendix I, Section 10.1 for appropriate values.

3.3.5.2.2 Location Identifier. The LI shall be two decimal digits in length. It shall be used to identify the physical location of the open system. See Appendix I, Section 10.2 for appropriate values.

3.3.5.2.3 System Type. The ST shall be two decimal digits in length. It shall be used to identify the open system or device type. See Appendix I, Section 10.3 for appropriate values.

3.3.5.2.4 Device Address. The DA shall be three decimal digits in length. It shall be used to specify the port number representing the open system's logical connectivity to the NADIN PSN.

3.3.5.2.5 Sub-address. The SA shall be two decimal digits in length. It shall be used to specify the sub-port number (i.e., packet assembler/ disassembler port) representing the open system's or device's logical connection to the NADIN PSN.

(THIS PAGE INTENTIONALLY LEFT BLANK)

4. QUALITY ASSURANCE PROVISIONS

This section is not applicable to this standard.

(THIS PAGE INTENTIONALLY LEFT BLANK)

5. PREPARATION FOR DELIVERY

This section is not applicable to this standard.

(THIS PAGE INTENTIONALLY LEFT BLANK)

6. NOTES

6.1 Definitions.

6.1.1 Reference Model Definitions. This standard is based on the concepts contained in ISO 7498 and uses the following terms defined in it:

a. Application-process
b. Application-entity

6.1.2 Naming and Addressing Definitions. This standard uses the following terms defined in ISO 7498-3:

a. Application-process title
b. Application-entity qualifier
c. Application-entity title
d. Descriptive names
e. Addresses
f. Naming and addressing authority
g. (N)-Selector; (N)-address-selector
h. System title name
i. (N)-entity-type

6.1.3 Application Layer Structure Definitions. This standard uses the following terms defined in ISO 9545:

a. Application-association
b. Application-context
c. Application-entity-invocation
d. Application-process-invocation
e. Application-process-type

6.1.4 Network Layer Addressing Definitions. This standard uses the following terms defined in ISO 8348/AD2:

a. Network service access point (NSAP)
b. Subnetwork point of attachment (SNPA)
c. Naming and addressing domains
d. Abstract syntax
e. Authorities

6.1.5 The Directory Model Definitions. This standard uses the following terms defined in ISO 9594-2:

a. Attribute
b. Attribute types
c. Attribute values
d. Attribute syntaxes
e. Directory system agent
f. Object classes

6.1.6 File Transfer, Access, and Management (FTAM) Definitions. This standard uses the following terms defined in ISO 8571-4:

a. File models
b. Constraint sets
c. Document types
d. Transfer syntaxes

6.1.7 Abstract Syntax Notation One (ASN.1) Definitions. This standard uses the following terms defined in ISO 8824:

a. Numeric string
b. Object identifier
c. Printable string

6.2 Abbreviations and Acronyms.

AAI	administrative authority identifier
AAP	advanced automation program
AD	addendum
AE	application entity
AFI	authority and format identifier
ALP	application layer protocol
AMA	administrative authority
ANSI	American National Standards Institute
AP	application process
AR	area
ASE	application service element
ASN	abstract syntax notation
ATN	Aeronautical Telecommunication Network
CCITT	International Telephone and Telegraph Consultative Committee
CLNS	connectionless-mode network service
CMIP	common management information protocol
CONS	connection oriented network service
DA	device address
DCC	data country code
DFI	DSP format identifier
DIT	directory information tree
DNIC	data network identification code
DOT	Department of Transportation
DSA	directory system agent
DSP	domain specific part
ESID	end-system identifier
FAA	Federal Aviation Administration
FIPS	federal information processing standards
FP	flight plan
FTAM	file transfer, access, and management
GOSIP	Government Open Systems Interconnection Profile
GSA	General Services Administration
ICAO	International Civil Aviation Organization
ICD	international code designator
IDF	identifier format
IDI	initial domain identifier
IDP	initial domain part
IEC	International Electrotechnical Commission
IS	intermediate system
ISO	International Organization for Standardization
LCN	local communications network
LI	location identifier
LID	location identifier

MHS	Message Handling System
MPS	maintenance processor subsystem
MSN	message switching network
NADIN	National Airspace Data Interchange Network
NAS	National Airspace System
NDIB	NAS directory information base
NET	network identification number
NID	network identification number
NIST	National Institute of Standards and Technology
NSAP	network service access point
NSEL	NSAP selector
NTN	network termination number
OSI	Open Systems Interconnection
PCI	protocol control information
PN	processor number
PSAP	presentation service access point
PSEL	presentation selector
PSN	packet switched network
PUB	publication
RD	routing domain
ROSE	remote operations service element
RS	reserved
SA	sub-address
SI	subnetwork identifier
SNPA	subnetwork point of attachment
SSAP	session service access point
SSEL	session selector
ST	system type
STD	standard
TMP	traffic management processor
TP	Transaction Processing
TSAP	transport service access point
TSEL	transport selector
U.S.	United States
VT	Virtual Terminal

APPENDIX I

10. END-SYSTEM ID PARAMETER VALUES

10.1 Subnetwork ID (SI).

0 - NADIN PSN
1 - Reserved

10.2 Location ID (LI).

ACF Location ID

1 - ZAB	Albuquerque
2 - ZAN	Anchorage
3 - ZTL	Atlanta
4 - ZBW	Boston
5 - ZAU	Chicago
6 - ZOB	Cleveland
7 - ZDV	Denver
8 - ZFW	Fort Worth
9 - ZHN	Honolulu
10 - ZHU	Houston
11 - ZID	Indianapolis
12 - ZJX	Jacksonville
13 - ZKC	Kansas City
14 - ZLA	Los Angeles
15 - ZME	Memphis
16 - ZMA	Miami
17 - ZMP	Minneapolis
18 - ZNY	New York
19 - ZLI	Long Island
20 - ZOA	Oakland
21 - ZLC	Salt Lake City
22 - ZSE	Seattle
23 - ZDC	Washington
24 - OEX	Aeronautical Center
25 - ACY	FAA Technical Center
26 - ATL	Atlanta NAWPF
27 - SLC	Salt Lake NAWPF
28 - DC05	FAA Headquarters - FOB 10A 800 Independence Ave. S.W., Washington, DC

10.3 System Type (ST).

1 - ACCC
2 - ADAS
3 - AATS
4 - AWP
5 - CFMWP
6 - CNSP
7 - DLP
8 - DUAT SERVICE
9 - FSDPS
10 - LABS
11 - NMCE
12 - MPS
13 - MWP
14 - RWP
15 - TMP
16 - VSCS
17 - WMSCR
18 - NADIN PSN/MSN Gateway
19 - NADIN PSN NCC